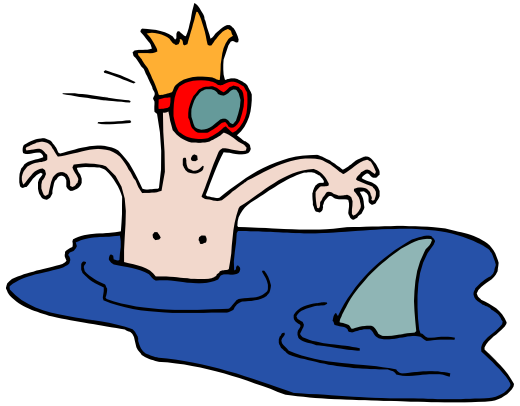
Utah Department of Agriculture & Food

Pesticide Applicators Continuing Education

What is a CEU?



- A CEU is a small creature that lives in a dark hole for 11 months of the year!
- CEU's only come out during the month of December, even though the CEU hunting season lasts 12 months.
- CEU's cannot be traded for plumbing work!
- Excess CEU's cannot be sold at the end of the license period.

How Many CEU's Do I Need?

- Commercial & Non-Commercial Applicators
  - 4 Credits in Laws
  - 10 Credits in Safety
  - 10 Credits in Use Management
  - 24 Total Credits

TOM MIHALEK / AP

How Many CE

- Commercial
  Applicato
  - 4 Credits in Laws
  - 10 Credits in Safety
  - 10 Credits in Use Management
  - 24 Total Credits

Updated CEU Requirements
For Commercial/Non-Commercial Applicators

Minimum Hours:
2 Credits in Laws
6 Credits in Safety
10 Credits in Use

24 Total Credits

How Many CEU's Do I Need?

- Private Applicators
  - 2 Credits in Laws
  - 3 Credits in Safety
  - 4 Credits in Use Management
  - 9 Total Credits

How Many CE

- Private Applicat

  - 2 Credi Laws
  - 3 C dits in Safety
  - 4 Credits in Use Management
  - 9 Total Credits

Updated CEU Requirements
For Private Applicators

Minimum Hours:
2 Credits in Laws
2 Credits in Safety
2 Credits in Use

9 Total Credits

Where Do You Find The #@$% Things?

- UDAF Workshops
- Grower Meetings
- Supplier Meetings
- UDAF Website
  - http://www.ag.utah.gov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GROUND WATER PESTICIDE PROGRAM

Serving Utah's Agricultural Communities


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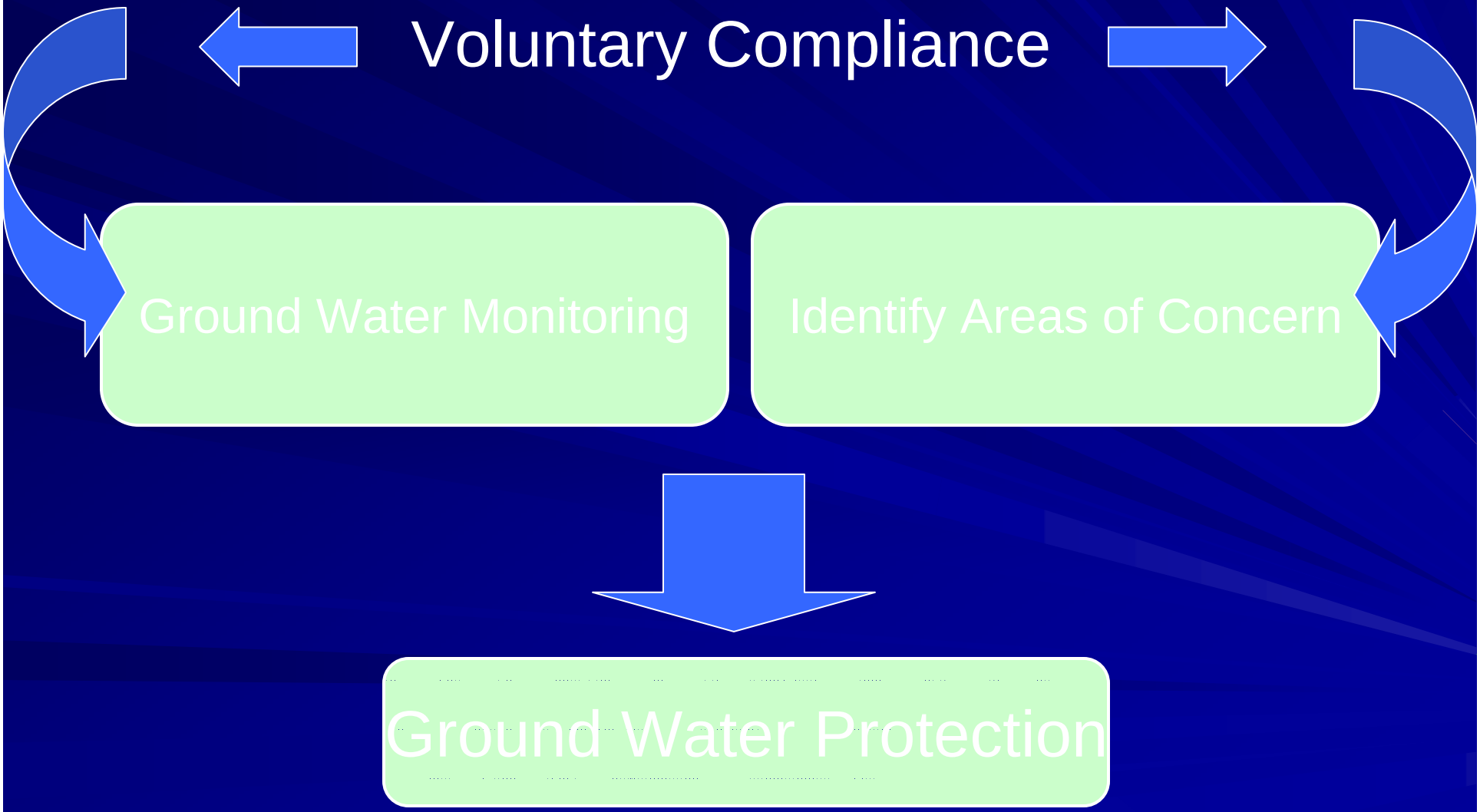
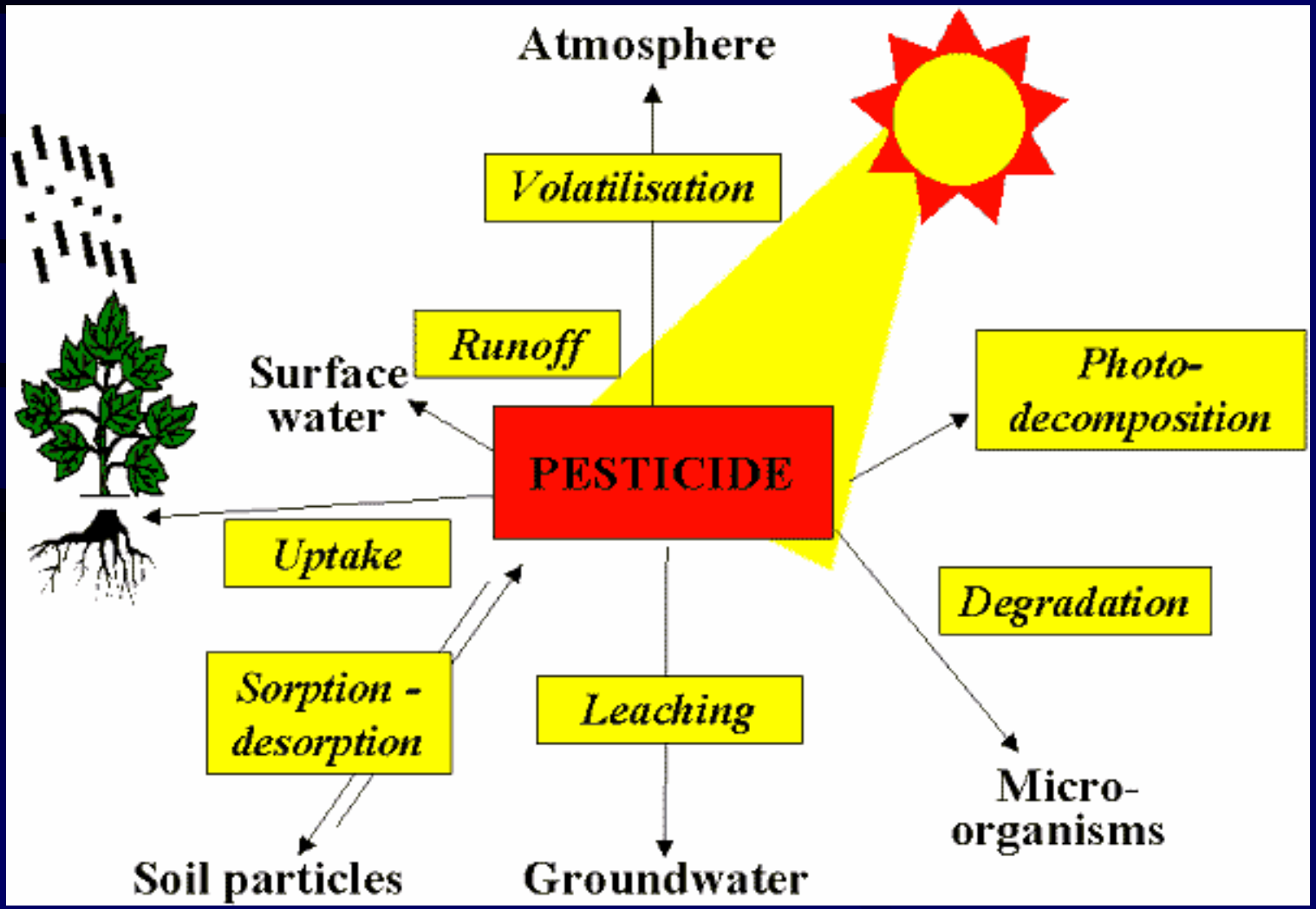
Utah's Ground Water Strategy



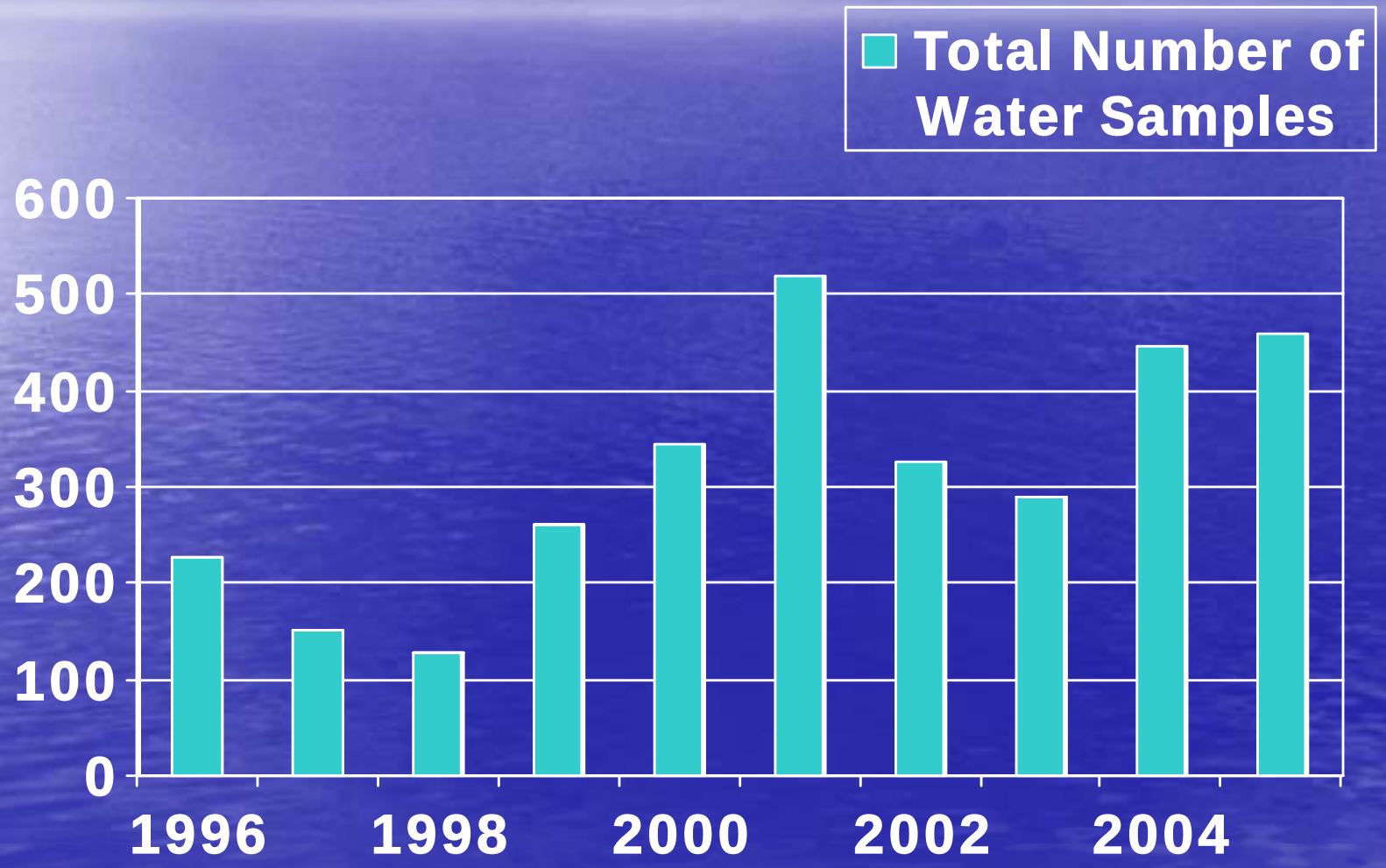
Utah Ground Water Pesticide Management Plan (PMP)

- Identifies 5 “Pesticides of Concern”
  - Alachlor
  - Atrazine
  - Cyanazine
  - Metolachlor
  - Simazine

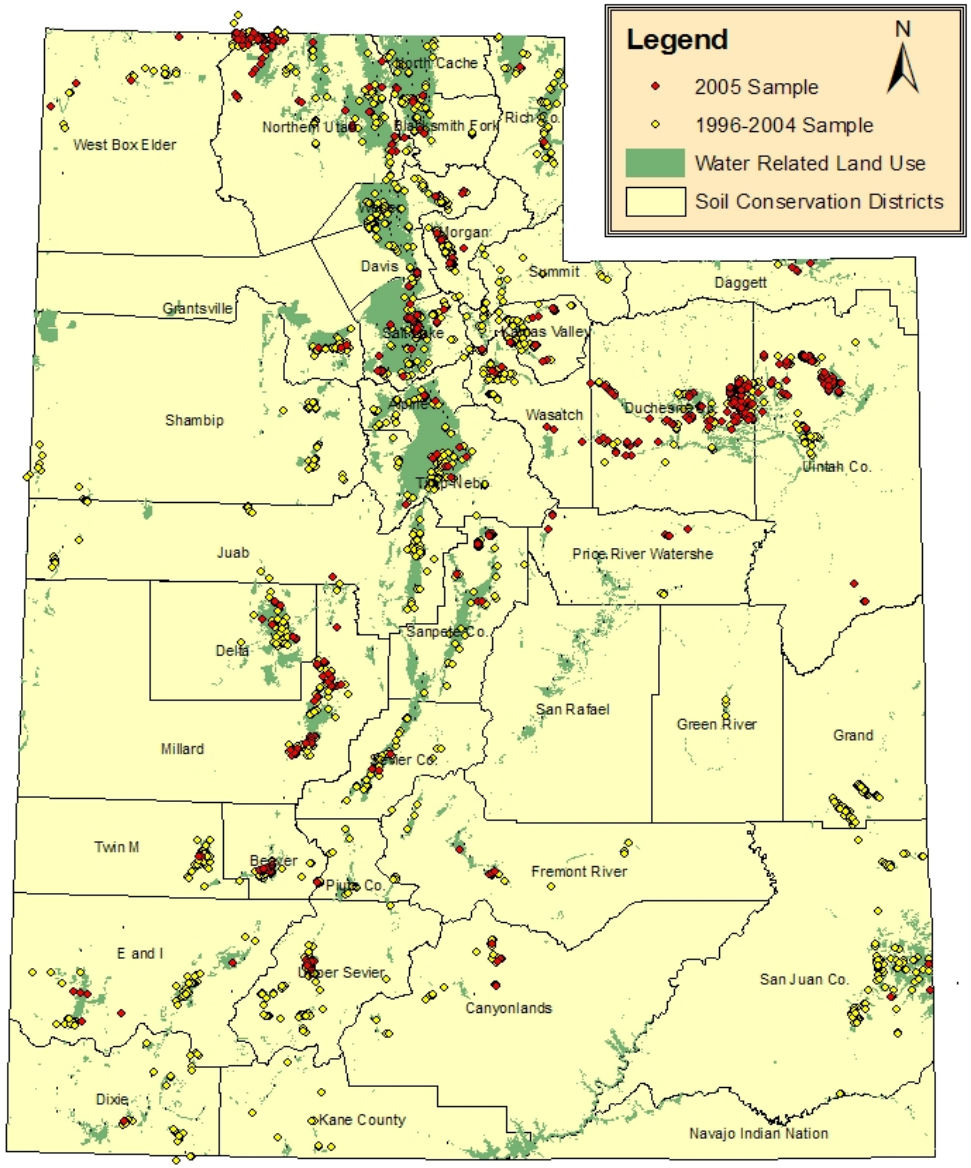
Life Cycle of a Pesticide



UDAF Ground Water Program Sampling History



GROUND WATER SAMPLING 1996-2005

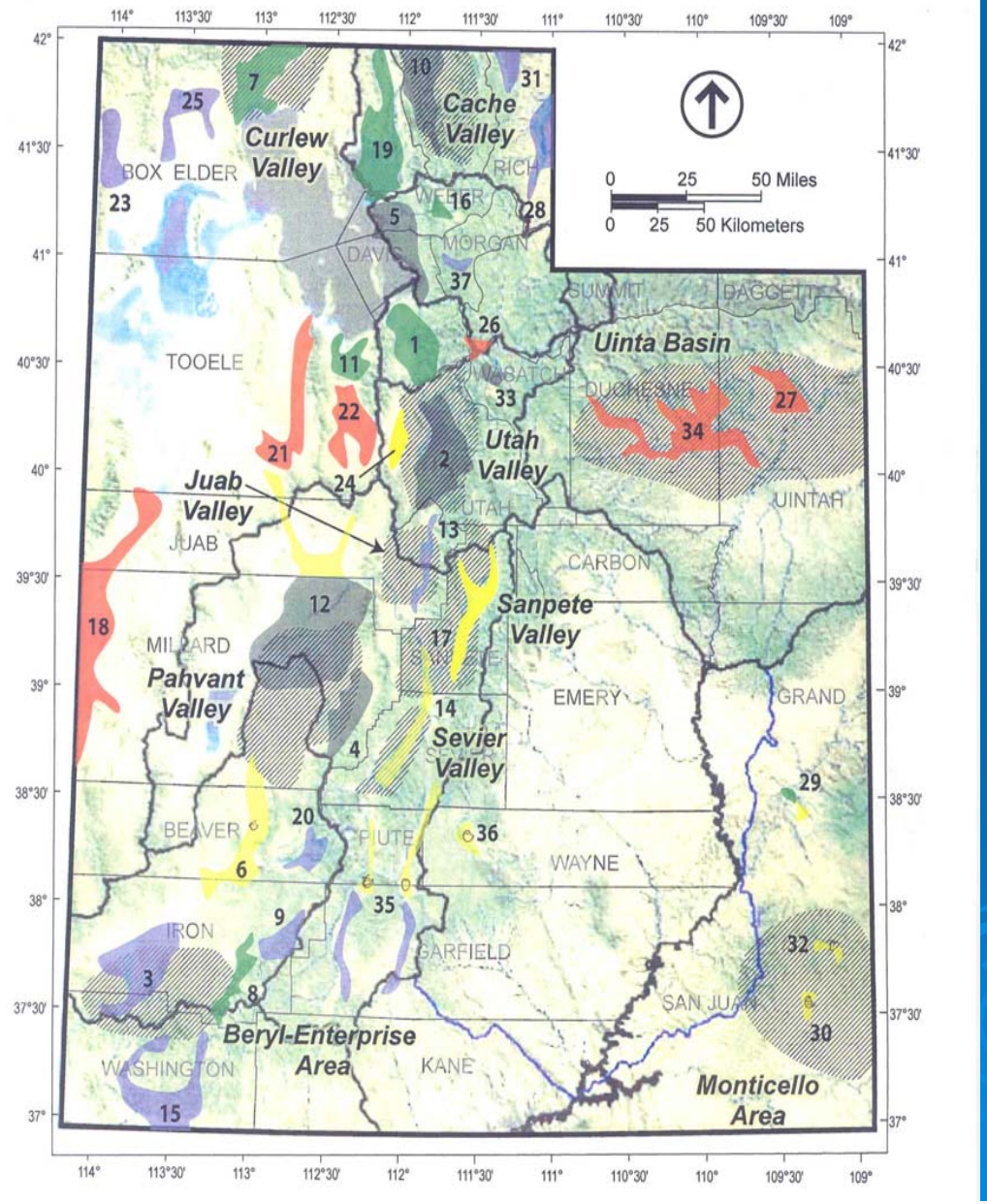


Units of Measurement:

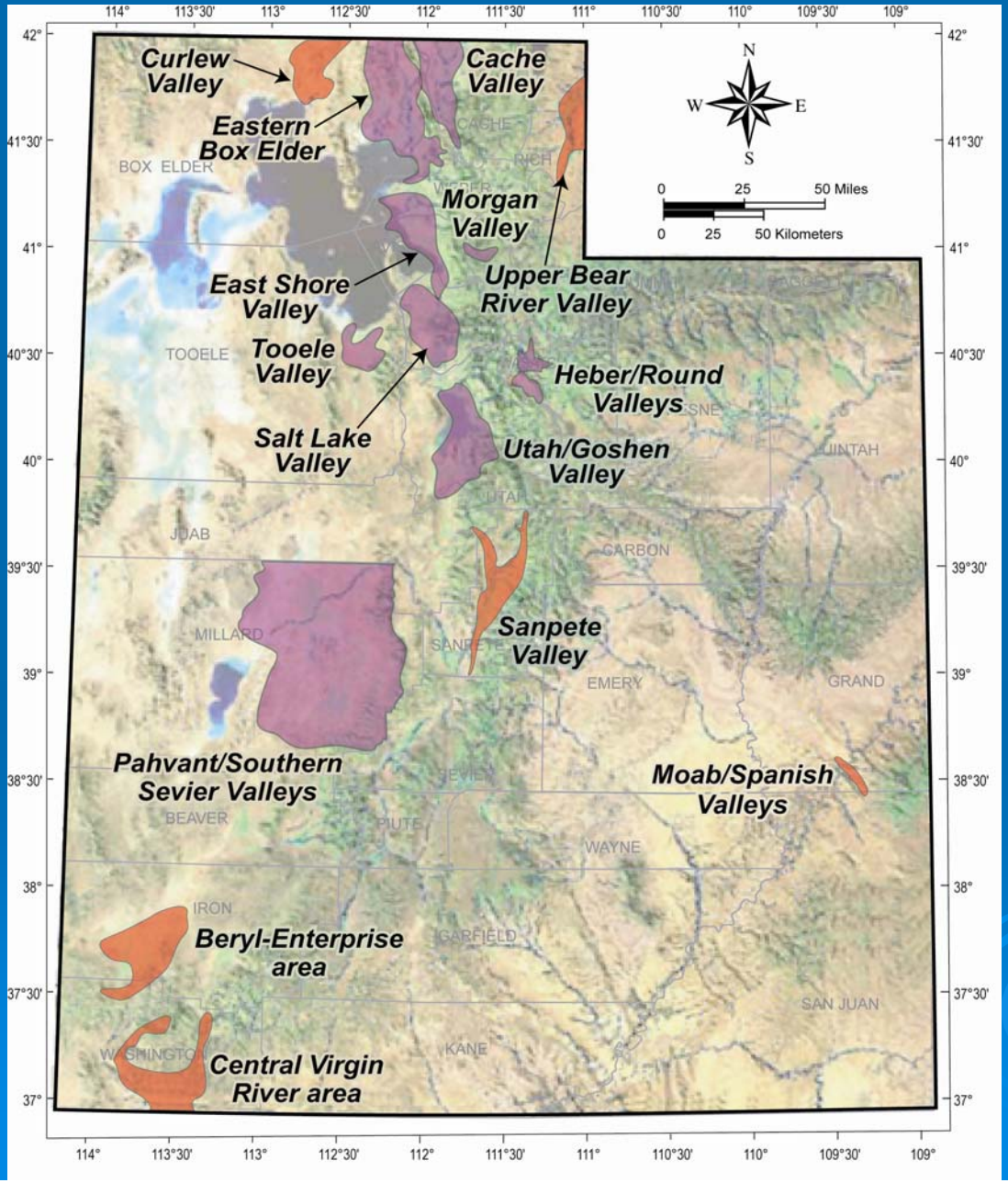
- parts per million = milligrams per kilogram (mg / kg)
  - 1 oz of sand in 31 tons of cement
  - 1 square foot in 23 acres
  - 1 minute in 695 days
- parts per billion = micrograms per kilogram (μ g / kg)
  - 1 square foot in 36 square miles
  - 1 pinch of salt in 10 tons of potato chips
  - 1 inch in a 160,000 mile trip
- parts per trillion = nanograms per kilogram (ng / kg)
  - 1 square inch in 250 square miles
  - 1 second in 320 centuries or 11,574,074 days
  - 1 postage stamp in an area the size of Texas

Estimating Vulnerability of Ground Water to Pesticides

Proposed Mapping Areas



Completed Projects

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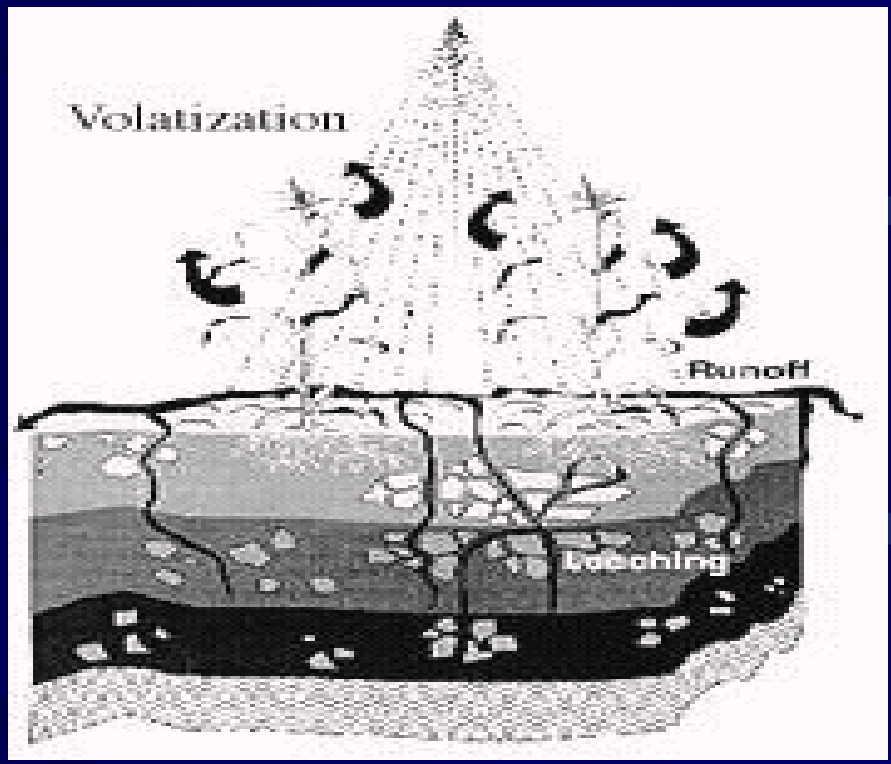
SELECT PESTICIDES CAREFULLY

- Select pesticides that are less likely to leach
- Pesticides that are likely to leach into the groundwater are highly water soluble, relatively persistent and do not absorb to soil.
- Read label carefully
  - rate
  - timing
  - advisories or water protection



CONSIDER THE VULNERABILITY OF THE SITE

- Determine:
  - soil texture
  - organic matter content
  - permeability
  - depth of water table
  - if sink holes are present
  - surface water runoff
  - some pesticides move readily through soil that is well drained, sandy, or low in organic matter

DISPOSE OF WASTES CAREFULLY

- Follow all label instructions and restrictions when disposing of chemical containers.
- Triple rinse.
- Don’t drain on ground
- Never dispose near water source.

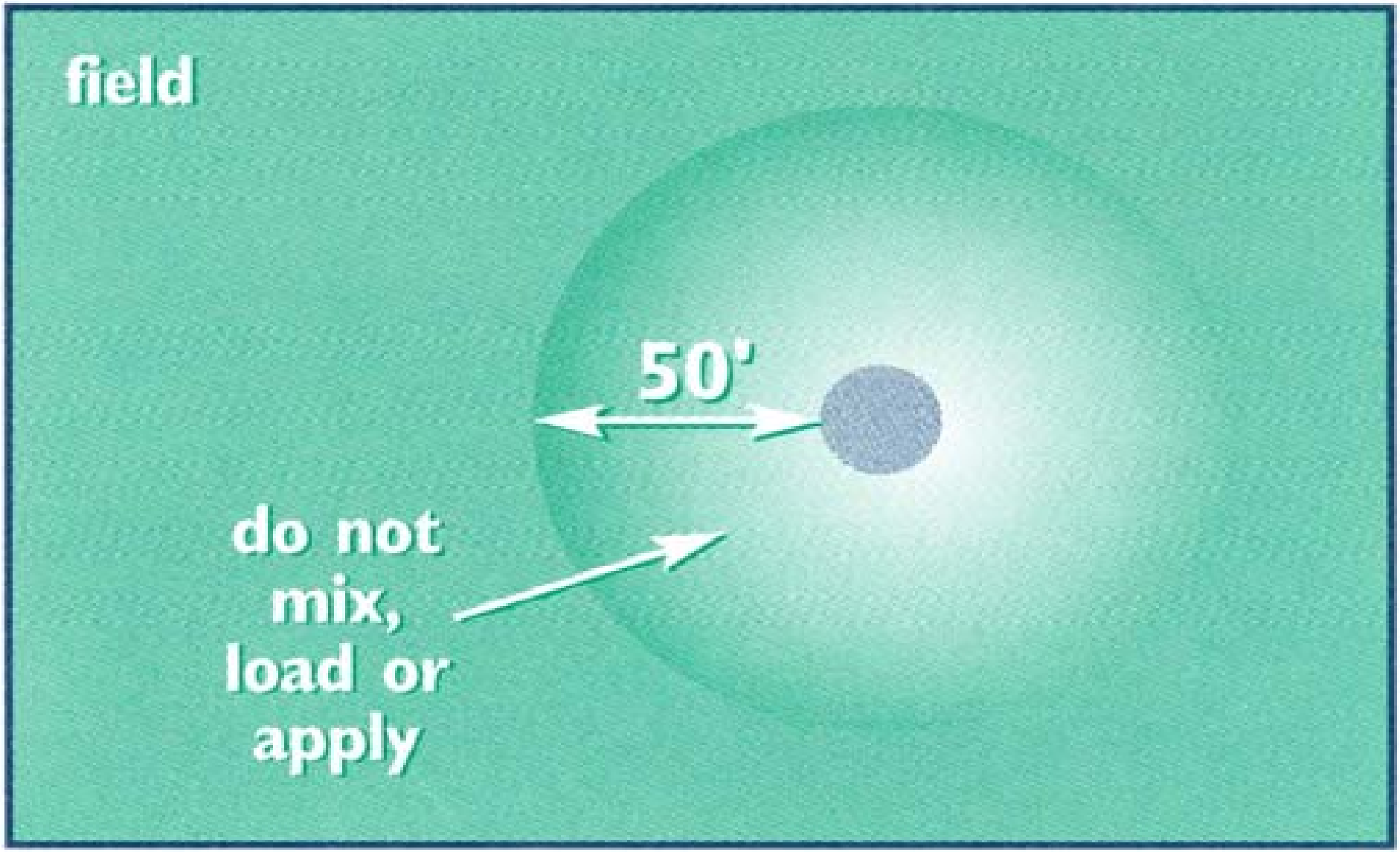
LEAVE BUFFER ZONES AROUND SENSITIVE AREAS

- Consider location of ground water when mixing, applying, storing and disposing pesticides.
- Establish vegetation or leave an untreated border to provide a buffer zone between pesticide and sensitive area.

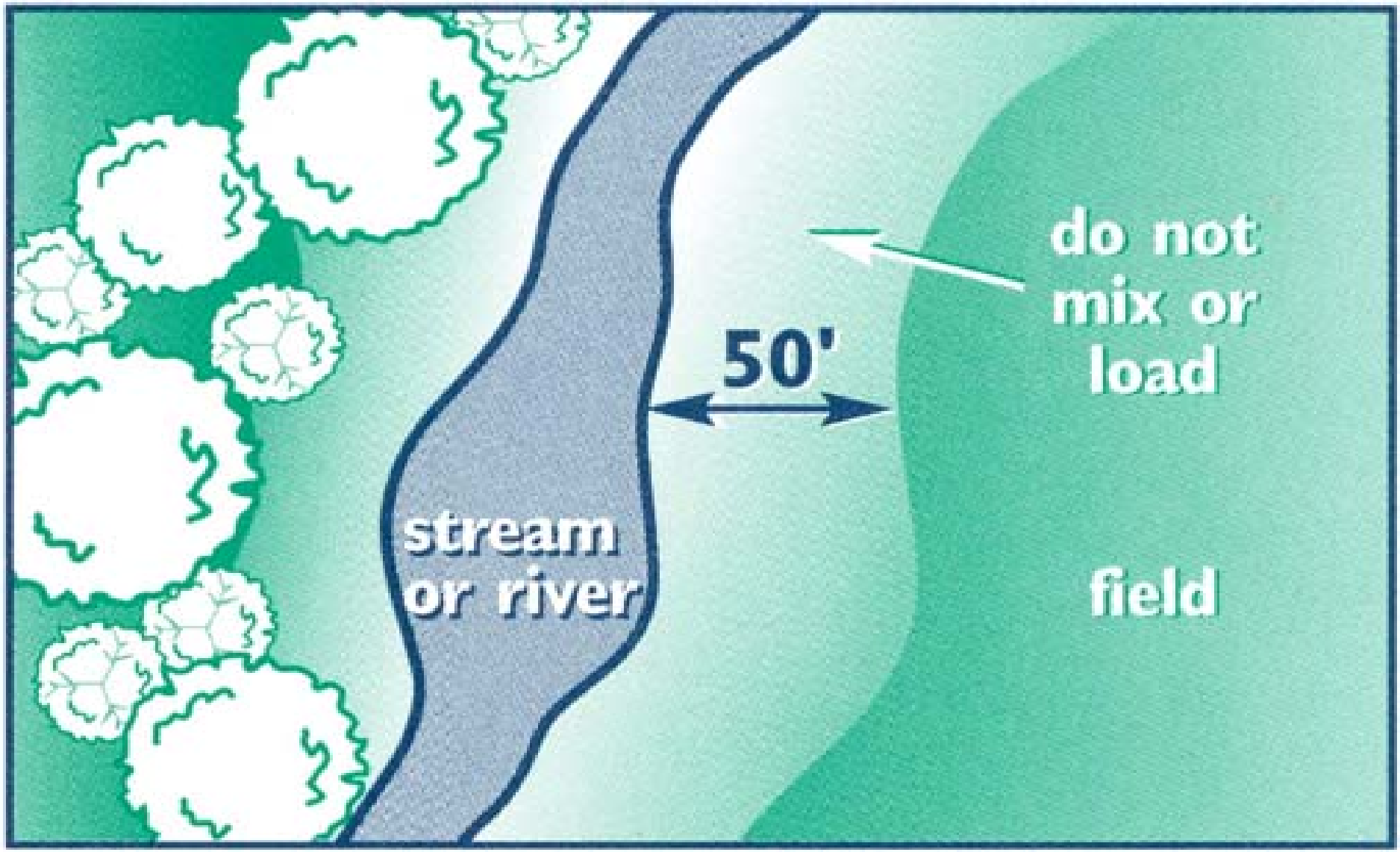
EVALUATE THE LOCATION OF WATER SOURCES

- Locate ground water and surface water
- Make sure wells are protected from spills or runoff
- Avoid mixing ,storing, or disposing of pesticides within 100 or more feet from a well or other water source.

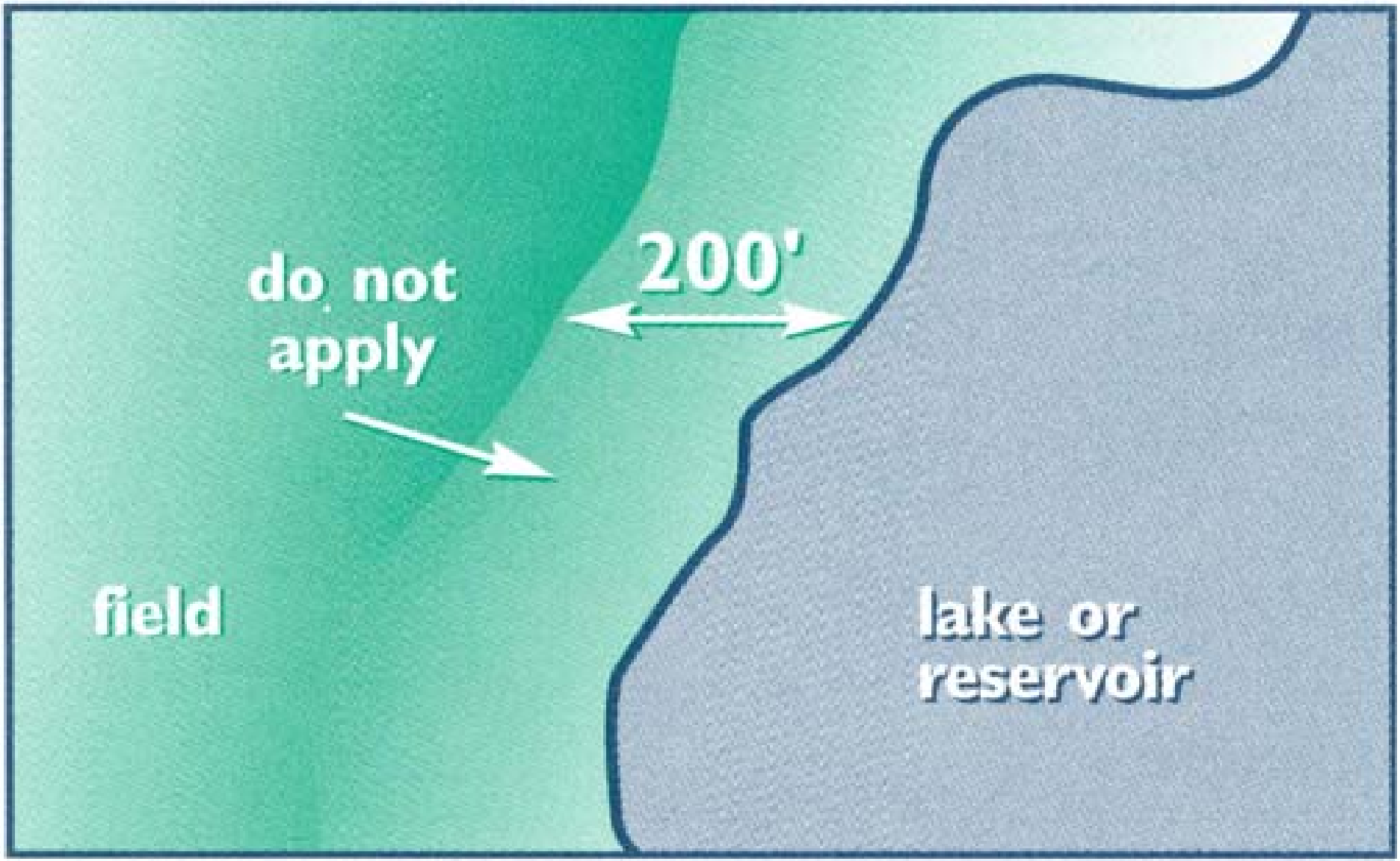
Do not mix, load or apply atrazine within 50 feet of any well or sinkhole.



Do not mix or load atrazine within 50 feet of any stream or river.

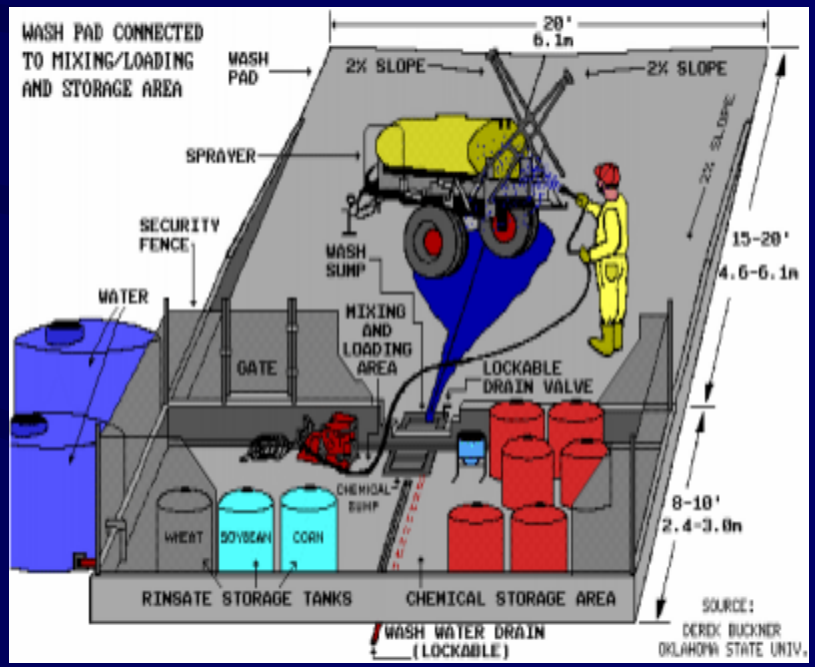


Do not apply atrazine within 200 feet of any lake or reservoir.



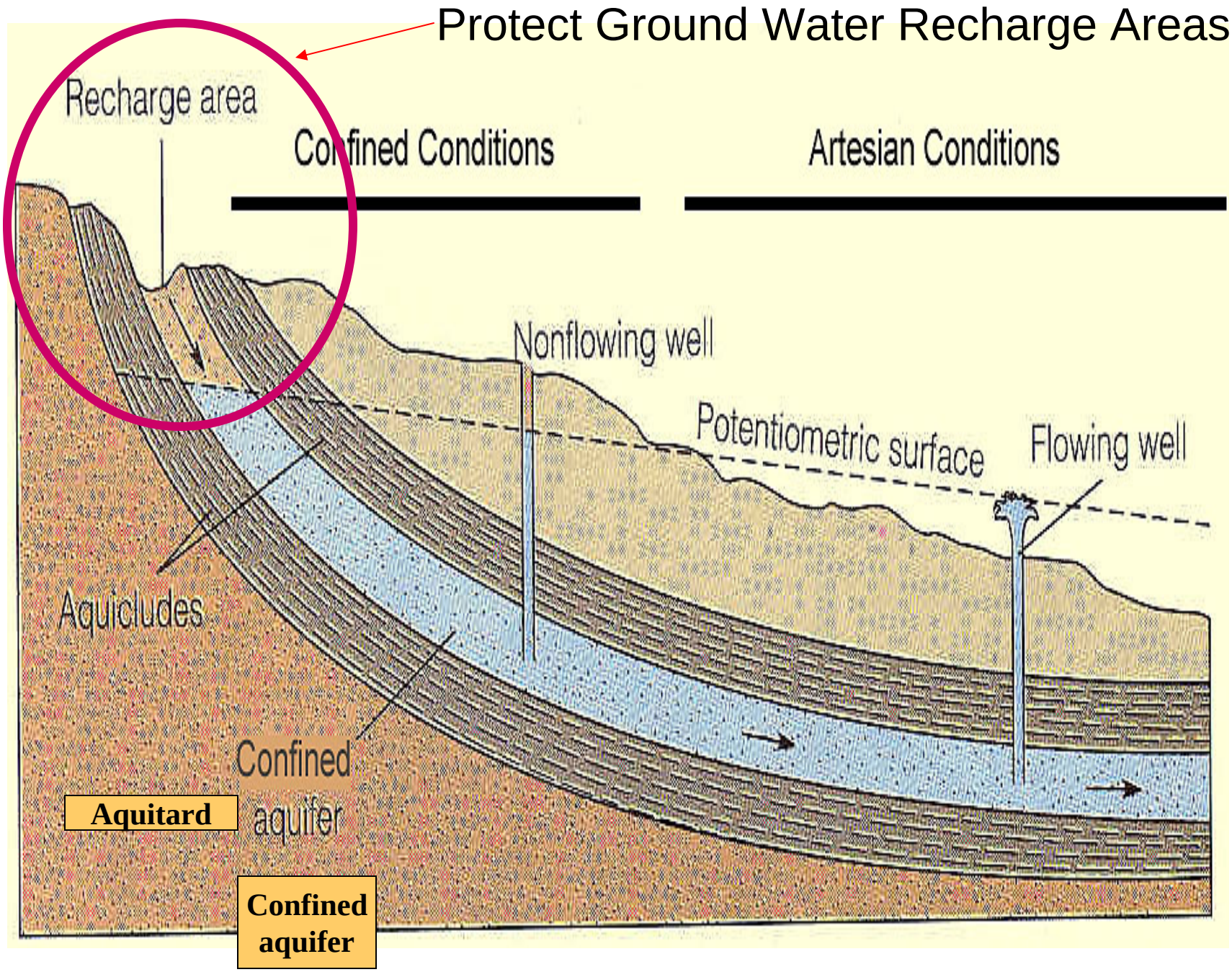
MIX AND LOAD CAREFULLY

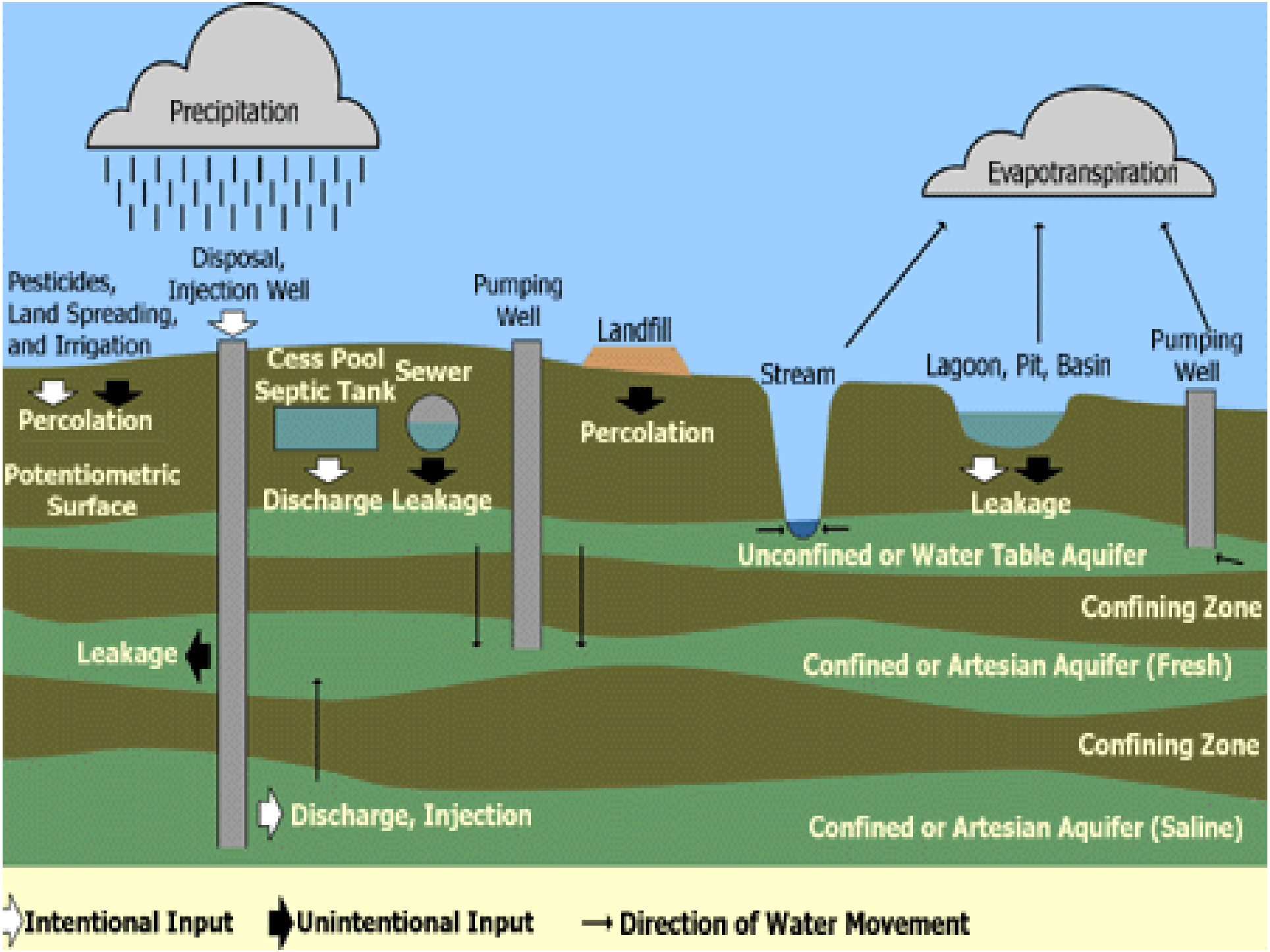
- When possible, mix and load on a concrete surface
- Fill tank away from water source
- In the field use a long hose or a nurse tank
- Never fill to the top to avoid spray mix from splashing out.
- Never leave unit unattended when filling

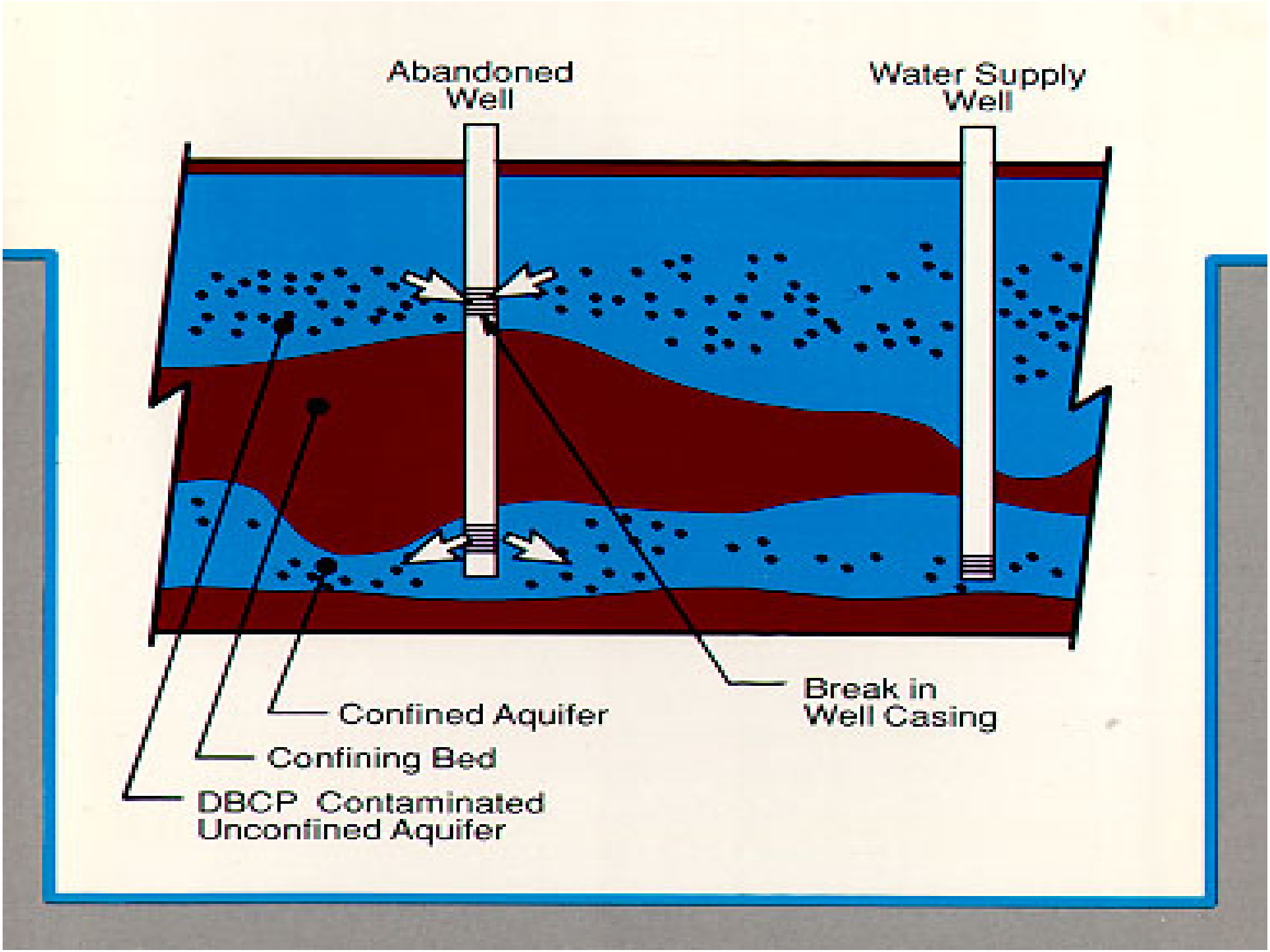


AREAS OF CONCERN

- Contamination at the Source
- Improper closure of wells


Protect Ground Water Recharge Areas
Recharge area
Confined Conditions
Artesian Conditions
Nonflowing well
Potentiometric surface
Flowing well
Aquicludes
Confined
aquifer
Aquitard
Confined aquifer


Precipitation
Evapotranspiration
Disposal,
Injection Well
Pesticides,
Land Spreading,
and Irrigation
Pumping
Well
Landfill
Cess Pool
Septic Tank
Sewer
Stream
Lagoon, Pit, Basin
Pumping
Well
Percolation
Percolation
Potentiometric
Surface
Discharge
Leakage
Leakage
Unconfined or Water Table Aquifer
Confining Zone
Leakage
Confined or Artesian Aquifer (Fresh)
Confining Zone
Discharge, Injection
Confined or Artesian Aquifer (Saline)
Intentional Input
Unintentional Input
Direction of Water Movement


Abandoned Well
Water Supply Well
Break in Well Casing
Confined Aquifer
Confining Bed
DBCP Contaminated Unconfined Aquifer

Improper Abandonment

- This well:
  - 28” diameter
  - 200’ depth
  - 100’ to water

Conclusions

- UDAF has found no evidence of pesticide contamination of ground water
- Monitoring should continue:
  - Most intensely in areas of high vulnerability
  - Less intensely in areas of moderate or low vulnerability.
- Maintaining water quality of streams as they enter alluvium-filled valley an essential factor in maintaining ground water quality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THANK YOU FOR
YOUR SUPPORT